WHAT IS CLAIMED IS:

1. A photosensor system comprising:

a photosensor array including a plurality of photosensors arranged two-dimensionally;

initializing means for applying a reset pulse signal to each of the photosensors of the photosensor array, thereby initializing the photosensors;

signal readout means for applying a pre-charge pulse signal to each of the photosensors of the photosensor array, applying a readout pulse signal to each of the photosensors, and receiving a voltage output from each of the photosensors; and

effective voltage adjusting means for applying, to each of the photosensors, correction signals for correcting, to optimal values, effective voltages of the signals applied to each of the photosensors by the initializing means and the signal readout means.

2. The photosensor system according to claim 1, further comprising optimal reading sensitivity setting means for reading, using the signal readout means, a subject image formed of pixels corresponding to the photosensors arranged two-dimensionally while changing an image reading sensitivity set for each of the photosensors by the initializing means and the signal readout means, thereby determining an optimal image reading sensitivity on the basis of image patterns of the subject image formed with respective set reading

sensitivities.

3. The photosensor system according to claim 1, wherein the correction signals applied by the effective voltage adjusting means set, at 0 V, average effective voltages of the signals applied to the photosensors by the initializing means and the signal readout means.

4. The photosensor system according to claim 1, wherein the correction signals applied by the effective voltage adjusting means adjust average effective voltages of signals, applied to each of the photosensors by the initializing means and the signal readout means, to values at which a change in a threshold voltage of each of the photosensors is minimized.

5. The photosensor system according to claim 1, wherein voltage waveforms of the correction signals applied by the effective voltage adjusting means have time integral values of polarities opposite to those of time integral values of voltage waveforms of the signals applied to each of the photosensors by the initializing means and the signal readout means.

6. The photosensor system according to claim 1, wherein each of signals, applied to each of the photosensors by the initializing means and the effective voltage adjusting means and by the signal readout means and the effective voltage adjusting means, has a pair of high-level and low-level voltages.

7. The photosensor system according to claim 1, wherein each of signals, applied to each of the photosensors by the initializing means and the effective voltage adjusting means and by the signal readout means and the effective voltage adjusting means, has pairs of high-level and low-level voltages.

8. The photosensor system according to claim 1, wherein:

each of the photosensors has a double-gate structure including a source electrode and a drain electrode formed with a semiconductor layer as a channel region interposed therebetween, and a top gate electrode and a bottom gate electrode formed above and below the channel region with respective insulating films interposed therebetween; and

the initializing means initializes each of the photosensors by applying the reset pulse signal to the top gate electrode of each of the photosensors, and the signal readout means applies the readout pulse signal to the bottom gate electrode of each of the photosensors, thereby outputting, as the output voltage, a voltage corresponding to charge accumulated in the channel region during a charge accumulating period ranging from termination of the initialization to application of the readout pulse signal.

9. A method of controlling a photosensor system including a photosensor array having a plurality of

photosensors arranged two-dimensionally, comprising:

an initializing step of applying a reset pulse signal to each of the photosensors of the photosensor array, thereby initializing the photosensors;

a signal readout step of applying a pre-charge pulse signal to each of the photosensors of the photosensor array, applying a readout pulse signal to each of the photosensors, and receiving a voltage output from each of the photosensors; and

an effective voltage adjusting step of adjusting, to predetermined optimal values, effective voltages of the signals applied to each of the photosensors in the initializing and signal readout steps.

10. The method according to claim 9, wherein the optimal values of the effective voltages of the signals applied to the photosensors, adjusted in the effective voltage adjusting step, are 0 V.

11. The method according to claim 9, wherein the optimal values of the effective voltages of the signals applied to the photosensors, adjusted in the effective voltage adjusting step, are values at which a change in a threshold voltage of each of the photosensors is minimized.

12. The method according to claim 9, wherein:

each of the photosensors has a double-gate structure including a source electrode and a drain electrode formed with a semiconductor layer as a

channel region interposed therebetween, and a top gate electrode and a bottom gate electrode formed above and below the channel region with respective insulating films interposed therebetween; and

the initializing means initializes each of the photosensors by applying the reset pulse signal to the top gate electrode of each of the photosensors, and the signal readout means applies the readout pulse signal to the bottom gate electrode of each of the photosensors, thereby outputting, as the output voltage, a voltage corresponding to charge accumulated in the channel region during a charge accumulating period ranging from termination of the initialization to application of the readout pulse signal.

13. The method according to claim 9, further comprising:

a pre-reading step of reading a subject image formed of pixels corresponding to the photosensors of the photosensor array arranged two-dimensionally, while changing an image reading sensitivity set for each of the photosensors in the initializing step and the signal readout step, thereby setting an optimal image reading sensitivity on the basis of image patterns of the subject image obtained while changing the image reading sensitivity;

an image reading step of reading an entire portion of the subject image using the set optimal image

reading sensitivity; and

an effective voltage adjusting step of adjusting, to the optimal values, the effective voltages of the signals applied to each of the photosensors of the photosensor array during the pre-reading step and the image reading step.

14. The method according to claim 13, wherein the pre-reading step includes:

a first step of applying a first reset pulse signal, having a predetermined polarity, to each of the photosensors in a first time period, thereby initializing the photosensors, a first signal voltage being applied during a period other than the first time period; and

a second step of applying, after the initialization, a first readout pulse signal, having a predetermined polarity, to each of the photosensors in a second time period, at which a pre-charge operation based on the pre-charge pulse signal has been finished, thereby outputting a first readout voltage corresponding to charge accumulated during a charge accumulating period ranging from termination of the initialization to application of the first readout pulse signal, a second signal voltage being applied during a period other than the second time period; and

the first readout pulse signal is applied in the second time period such that it changes the charge

accumulating period at a predetermined ratio, and an optimal charge accumulating period is determined on the basis of an image pattern of the subject image obtained from the first readout voltage corresponding to charge accumulated in each charge accumulating period.

15. The method according to claim 14, wherein

the image reading step includes:

a third step of applying a second reset pulse signal, having a predetermined polarity, to each of the photosensors in a third time period, thereby initializing the photosensors, a third signal voltage being applied during a period other than the third time period; and

a fourth step of applying, after the initialization, a second readout pulse signal, having a predetermined polarity, to each of the photosensors at which a pre-charge operation based on the pre-charge pulse signal has been finished, in a fourth time period corresponding to the optimal charge accumulating period determined during the pre-reading step, thereby outputting a second readout voltage corresponding to charge accumulated during the optimal charge accumulating period ranging from termination of the initialization to application of the second readout pulse signal, a fourth signal voltage, being applied during a period other than the fourth time period, and

the effective voltage adjusting step includes:

a fifth step of applying, to each of the photosensors, a fifth signal having a predetermined effective voltage for adjusting, to the optimal value, an effective voltage applied to each of the photosensors and based on the first and second reset pulse signals and the first and third signal voltages applied in the first and third steps; and

a sixth step of applying, to each of the photosensors, a sixth signal having a predetermined effective voltage for adjusting, to the optimal value, an effective voltage applied to each of the photosensors and based on the first and second readout pulse signals and the second and fourth signal voltages applied in the second and fourth steps.

16. The method according to claim 15, wherein:

the fifth signal is created with reference to the optimal effective voltage set in accordance with a sensitivity characteristic of each of the photosensors and has an effective voltage with a polarity opposite to the effective voltage applied to each of the photosensors and based on the first and second reset pulse signals and the first and third signal voltages applied in the first and third steps; and

the sixth signal is created with reference to the optimal effective voltage set in accordance with the sensitivity characteristic of each of the photosensors and has an effective voltage with a polarity opposite

to the effective voltage applied to each of the photosensors and based on the first and second readout pulse signals and the second and fourth signal voltages applied in the second and fourth steps.

17. The method according to claim 15, wherein:

in the fifth step, the fifth signal is applied to each of the photosensors, which has a fifth voltage component lower than the optimal effective voltage set in accordance with the sensitivity characteristic of each of the photosensors, and a sixth voltage component higher than the optimal effective voltage, the fifth and sixth voltage components having their time widths set to predetermined values at which an absolute value of a time integral value of the first and third signal voltages and the fifth voltage component is equal to an absolute value of a time integral value of the first and second reset pulse signals and the sixth voltage component; and

in the sixth step, the sixth signal is applied to each of the photosensors, which has a seventh voltage component lower than the optimal effective voltage set in accordance with the sensitivity characteristic of each of the photosensors, and an eighth voltage component higher than the optimal effective voltage, the seventh and eighth voltage components having their time widths set to predetermined values at which an absolute value of a time integral value of the second

and fourth signal voltages and the seventh voltage component is equal to an absolute value of a time integral value of the first and second readout pulse signals and the eighth voltage component.

18. The method according to claim 15, wherein voltage waveforms of the signals applied to each of the photosensors in the first, third and fifth steps, and voltage waveforms of the signals applied to each of the photosensors in the second, fourth and sixth steps are generated by two-value drivers each for generating a pair of low-level and high-level voltages.

19. The method according to claim 15, wherein voltage waveforms of the signals applied to each of the photosensors in the first, third and fifth steps, and voltage waveforms of the signals applied to each of the photosensors in the second, fourth and sixth steps are generated by multi-level drivers each for generating pairs of low-level and high-level voltages.